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PATENT APPLICATION
Attorney Docket No. **D/98093**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Tadd H. Hogg et al.	)	
	)	Art Unit: 3653
Appl. No.: 09/033,222	)	
	)	Examiner: Jeffrey A. Shapiro
Filed: March 2, 1998	)	

Title: DISTRIBUTED CONTROL SYSTEM WITH GLOBAL CONSTRAINTS FOR CONTROLLING OBJECT MOTION WITH SMART MATTER

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Respectfully submitted,

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Grenoble, France
Date: November 14, 2002

E/U 12/3/02 Appeal Brief #15

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Commissioner for Patents
BOX AF
Washington, D.C. 20231

APPEAL BRIEF

Sir:

Applicant respectfully submits this Appeal Brief in the appeal of the present case to the Board of Appeals and Patent Interferences on the Notice dated September 17, 2002.

1. Real Party of Interest

The real party of interest in the present application is the assignee of the present application, Xerox Corporation.

2. Related Appeals and Interferences

There is no related appeal or interference.

3. Status of the Claims

Claims 1-20 are pending in this application. Of these, claims 1 and 15 are independent claims.

Claims 1-20 have been finally rejected in an Office Action dated May 17, 2002, on the grounds further discussed herein.

4. Status of Amendments

All amendments to the claims made in an amendment under 37 C.F.R. §1.111 dated March 8, 2002 have been entered and are reflected in the claims forming Appendix A hereto.

Amendments proposed in an amendment after final under 37 C.F.R. §1.116 dated July 8, 2002 were not entered by the Advisory Action dated July 9, 2002, and are therefore not reflected in the claims set forth in Appendix A.

5. Summary of Invention

Applicant's invention concerns a distributed control system for controlling the movement of an object along a transport assembly (Specification, section B starting on page 10). As illustrated in Figure 6, the distributed control system controls the movement of an object (102) along the transport assembly (106) using sensors (203) and actuators (202) (e.g., air valves) embedded therein.

Also as illustrated in Figure 6, the distributed controller (230) is made up of a global controller (602) and computational agents organized in local neighborhoods (620). Further as illustrated in Figure 6, each computational agent receives positional information from at least one sensor unit and computes a desired actuator response for at least one actuator unit in a spatially localized area of control on the transport assembly.

Applicant observed that cross-coupling of output between actuators may occur because of the proximity and high-density in which actuators are placed on the transport assembly. To account for side effects caused by such cross-coupling, the computational agents are organized into a plurality of local neighborhoods. (Specification, paragraph starting on page 13, line 16)

The computational agents in each local neighborhood are coupled to sensors and actuators that are located physically proximate to each other on the transport assembly (Specification, page 11, lines 6-8). In addition, the computational agents in each local neighborhood are communicatively coupled to each other for directly communicating their desired actuator responses to each other (Specification, page 11, lines 4-8).

The global controller is coupled indirectly to the computational agents; the global controller receives aggregate operating characteristics from and delivers global constraints to the computational agents. Advantageously communication between the global controller and the computational agents is simplified since the global controller does not communicate directly with any one computational agent but instead delivers control information generally to all computational agents. (Specification, paragraph starting on page 16, line 1)

In accordance with Applicant's invention, each computational agent acts independent from any other agent and the global controller to ascertain how much force should be applied to its localized region of control to move an object along the transport assembly. Specifically, in calculating its desired actuator response, each computational agent uses: (a) data from its localized region of control; (b) desired actuator responses from its local neighborhood of computational agents; and (c) global constraints received from the global controller. (Specification, page 14, lines 8-14)

6. Issues

The first issue presented herein is whether claims 1-20 are unpatentable under 35 USC §103(a) over Satoshi Konishi and Hiroyuki Fujita, entitled "A Conveyance System Using Air Flow Based on the Concept of Distributed Micro Motion Systems", published in the Journal of Microelectromechanical Systems, Volume 3., No. 2, pages 54-58, June 1994 (hereinafter referred to as "Fujita") in view of Harada et al., U.S. Patent No. 5,553,003 (hereinafter referred to as "Harada").

The second issue presented herein is whether claims 1-20 are unpatentable under the judicially created doctrine of obviousness-type double patenting over claims 1-6 of U.S. Patent No. 5,634,636.

7. Grouping of Claims

The claims stand or fall together as a group. For purposes of the argument presented below, claim 1 is discussed as a representative claim.

8. Argument

1. Rejection Of Claims 1-20 Under 35 U.S.C. § 103

Claims 1-20 were rejected under 35 USC §103(a) as being unpatentable over Fujita in view of Harada. Claim 1 is discussed below as the representative claim of claims 1-20. The final Office Action dated May 17, 2002 (hereinafter referred to as the "Office Action") on pages 2-4 asserts that Fujita discloses all of the elements of claim 1. Applicant traverses the rejection for the following two reasons.

As a whole, Applicant's invention set forth in claim 1 concerns a transport assembly for moving an object. The transport assembly includes sensor and actuator units, computational agents, and a global controller. The global controller is coupled to the computational agents to (a) receive aggregate operating characteristics from and (b) deliver global constraints to the computational agents.

In addition, the computational agents are grouped into a plurality of neighborhoods that are each: (a) coupled to sensors and actuators that are located physically proximate to each other on the transport assembly; and (b)

communicatively coupled to each other for directly communicating their desired actuator response to each other.

Applicant submits that in evaluating these elements of claim 1 as a whole, Fujita does not disclose or suggest Applicant's claimed invention where each computation agent determines adjustments to its actuators coupled thereto using: (i) the global constraints from the global controller, (ii) the positional information from the computational agents in its local neighborhood, and (iii) its positional information from sensors coupled thereto.

A. The combination of Fujita and Harada is improper

Although the Office Action does not rely on Fujita in rejecting representative claim 1, Applicant will nonetheless discuss the combination of Fujita and Harada below. Generally, when a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references. In re Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

The Office Action asserts (on page 10, line 13 - page 11, line 2) that Fujita and Harada are analogous art because they "concern distributed control and the solving of associate problems such as coordination of disparate subsystems". In addition, the Office Action asserts in the cited section that "it would have been obvious [] to have used the distributive control system of Harada [] to control the microactuator arrays of Fujita", thereby providing the motivation to combine the references.

Applicant's traverse the assertion that Harada and Fujita are analogous art. While Fujita concerns a MEMS (Microelectromechanical System) airflow based conveyance system (Fujita, abstract), Harada is directed at a distributed control system for controlling power distribution (Harada, preferred embodiments starting in columns 4, 3, 7, and 9).

In addition, neither Fujita or Harada provide any express direction or suggestion that their teachings may be combined. More specifically, there is no suggestion in Harada that its distributed control system adapted for controlling power distribution may be used in the field of a MEMS conveyance system to which Fujita is directed.

Furthermore, neither Fujita or Harada identify or suggest the problem to which the present invention is directed. Unlike the multi-agent control system disclosed in Harada for controlling power distribution, Applicant's multi-agent control system concerns a control system for controlling movement of an object along a transport assembly with arrays of microelectromechanical systems which have a tight coupling between computational agents and their embedded physical space (Specification, paragraph starting on page 3 line 19).

In summary, unlike the control system in Harada that is discloses a multi-agent control system for distributing power, Applicant's multi-agent control system is adapted to respond to local perturbations while robustly carrying out a global goal to move an object along a transport assembly composed of an array of microelectromechanical systems (Specification, paragraph starting on page 4, line 7). Thus, absent any suggestion in the references, the combination of Fujita and Harada as applied to claims 1-20 is believed to be improper and cannot support the rejection of claim 1.

<u>B. The combination of Fujita and Harada does not teach or suggest the claimed invention</u>

Furthermore, even if it were permissible to combine Fujita and Harada, the combination would fail to teach the claimed invention for the reasons set forth in sections B.1, B.2 and B.3 below.

<u>B.1 A "global controller" that receives aggregate operating characteristics and delivers global constraints is not disclosed or suggested</u>

In accordance with one aspect of Applicant's invention recited in claim 1, a global controller receives aggregate operating characteristics and delivers global constraints to computational agents, where each computational agent receives positional information from at least one sensor unit and computes a desired actuator response for at least one actuator unit in a spatially localized region of control on the transport assembly.

Unlike Harada, which discloses a distributed system in which subsystems communicate directly with a supervising system, Applicant's claimed invention concerns a distributed control system in which a global controller receives aggregate (i.e., generalized) operating characteristics from computational agents and delivers

global constraints to computational agents. In one embodiment, the global controller receives from a filtered sensor information that has been averaged over a global operating interval (Specification, page 15, line 19-20).

In contrast, Harada discloses at column 4, lines 9-10, that the supervising subsystem receives subgoal achievement performance. As shown in Figure 3, Harada discloses a process flow operation between a supervising subsystem and a plurality of subsystems, in which communication between the supervising subsystem and the plurality of subsystems does involve communicating an aggregation of performance results as claimed by Applicant. Instead as set forth in column 4, lines 12-15 of Harada, "the supervising subsystem compares [] subgoal achievement performances received from the respective subsystems with each other, and evaluates the comparison results".

Furthermore, the supervising subsystem does not deliver global constraints to the subsystems as claimed by Applicant. As set forth at column 4, lines 18-21 of Harada, the supervising subsystem transmits to a subsystem "execution instructions" if it determines that a subgoal should be executed by it. Accordingly, Harada discloses that the supervising subsystem transmits directly to each subsystem a computed subgoal, not global constraints as claimed by Applicant.

In contrast, Fujita discloses distributed micro motion systems (DMMS) as shown in Figs. 1 and 2 and the control of which is described generally on page 54, lines 12-19, as follows:

> When many microactuators are batch-fabricated in an array on a substrate, the coordination of their simple motions will perform a more complicated task. To put it another way, such coordination as mentioned above means allotting a portion of the complicated task to each microactuator. The ultimate form of DMMS is expected to consist of many smart modules which have microactuators, microsensors and controllers (Fig. 1); this is the final goal of our study.

If there existed some reason to combine Harada and Fujita, their combination would suggest a supervising subsystem that would compute a subgoal for, and communicate a subgoal directly to, each subsystem that is to carry out the subgoal. Accordingly, Applicant submits that Fujita taken singly or in combination with Harada

do not disclose as claimed by Applicant a global controller that receives aggregate operating characteristics and delivers global constraints to computational agents that receive positional information from at least one sensor unit and compute a desired actuator response for at least one actuator unit in a spatially localized region on a transport assembly.

B.2 "Local neighborhoods" of computational agents are not disclosed or suggested

In accordance with another aspect of Applicant's invention recited in claim 1, computational agents are grouped into a plurality of local neighborhoods, where each local neighborhood is: (a) coupled to sensors and actuators that are located physically proximate to each other on the transport assembly; and (b) communicatively coupled to each other for directly communicating their desired actuator responses to each other. Advantageously, this aspect of the invention minimizes cross-coupling effects between computational agents (Specification, paragraph starting on page 13, line 16).

The Office Action assets on page 3, paragraph numbers 5-6, that these aspect of Applicant's invention are disclosed by Fujita in Figure 1 and on page 54, lines 12-17 (recited above in section B.1). In support of its assertion concerning the disclosure of local neighborhoods of computational agents, the Office Action states on page 3, lines 2-6:

> See figure 1, noting that each module having an actuator, sensor, logic circuit and communication circuit may be construed as a local neighborhood, and that it is inherent that in order for such a micro motion system to work, small groups of these local neighborhoods would have to be coordinated.

Applicant respectfully disagrees and submits that nothing in Figure 1 or on page 54, lines 12-17 of Fujita disclose or suggest the grouping of local neighborhoods of computational agents as recited in Applicant's claim 1.

Applicant in claim 1 recites that computational agents in each local neighborhood of computational agents are coupled to sensors and actuators that are located physically proximate to each other on the transport assembly. In addition, Applicant in claim 1 recites that computational agents in each local neighborhood of computational agents are communicatively coupled to each other for directly communicating their desired actuator responses to each other. Further, Applicant in

claim 1 recites that: each computational agent receives positional information from at least one sensor unit and computes a desired actuator response for at least one actuator unit in a spatially localized region of control on a transport assembly.

Fujita does not describe how control is maintained between DMMS. A DMMS as disclosed in Fujita consists of an array of smart micro modules that each includes a logic circuit, actuators, and sensors (Fujita, Figure 1 and page 54, column 2, lines 17-18 of the introduction). However, each of Applicant's claimed localized neighborhoods of computational agents is more than a smart micro module as described and shown in Fujita. That is, Applicant's claim in addition to a smart micro module (e.g., local computational agents, sensors 203, and actuators 202 shown in Applicant's Figure 6), localized neighborhoods of smart micro modules (e.g., neighborhoods 620 shown in Applicant's Figure 6).

Similarly, Harada fails to disclose or suggest arranging its disclosed subsystems into local neighborhoods, where the local neighborhoods of subsystems communicate directly with each other subgoal responses. Harada instead discloses a hierarchical control system, each embodiment involves communication between elements at different levels in a hierarchy, not between elements in the same level of a hierarchy (Harada, see Figs. 1, 2, 4, 9, 10, 11, 13). Specifically regarding Fig. 12 of Harada, Harada discloses a control system in which connected power companies as shown in Fig. 12 has a dispatching center as shown in Fig. 11 (Harada, see col. 7, lines 48-65).

Generally, control is top down in Harada and would therefore not necessitate or suggest sharing subgoal information between subsystems. The combination of Fujita and Harada (or either taken singly) would thus fail to disclose or suggest a plurality of local neighborhoods of computational agents because neither Fujita nor Harada disclose or suggest that the local neighborhoods of computational agents would directly communicate desired actuator responses to others in their neighborhood.

<u>B.3 Computational agents that compute actuator response using (i) global constrains, (ii) neighborhood desired actuator responses, and (iii) its sensor information is not disclosed or suggested</u>

In accordance with yet another aspect of Applicant's invention recited in claim 1, each computation agent uses (i) the global constraints delivered by the global controller (discussed above in section B.1), (ii) the desired actuator responses received from the computational agents in their local neighborhood (discussed above in section B.2), and (iii) the positional information from the at least one sensor unit in its spatially localized region of control, to determine adjustments to the at least one actuator unit in its spatially localized region of control, to move an object along a transport assembly.

The Office Action assets on pages 3-4, paragraph number 7, that these aspects of Applicant's invention are disclosed by Fujita as recited below:

> each of said computational agents use;
>
> i. the global constrains delivered by the global controller (note that position is consider to be a global constraint);
>
> ii. the desired actuator responses received from the computational agents in their local neighborhood (note that a logic circuit is included in each module, which may be construed to be capable of computing);
>
> iii. the positional information from the at least one sensor unit is in its spatially localized region of control (again, note that a sensor is located in each module for sensing position);
>
> to determine adjustments to the at least one actuator unit in its spatially localized region of control to move the object along the transport assembly;
>
> (Note that on p. 54, under "Introduction", lines 12-17, Fujita et al states that coordination of many microactuators by allotting a portion of a complex task to each microactuator is the intended method of control of a distributed micro motion system. This scheme inherently requires the previously mentioned information to be used.)

For the limitation (i), Applicant submits that whether "position is considered to be a global constraint" (Office Action, page 3, lines 15-16), Fujita does not disclose or suggest the existence of a global controller that computes global constraints whether taken singly or in combination with Harada as discussed above in Section B.1.

For the limitation (ii), Applicant submits that whether Fujita discloses "a logic circuit is included in each module, which may be construed to be capable of computing" (Office Action, page 3, lines 18-20), Fujita fails to disclose or suggest desired actuator responses received from computational agents in its neighborhood, as discussed above in Section B.2.

For the limitation (iii), Applicant submits regarding the use of positional information from at least one sensor unit in its spatially localized region of control, the presence of this element cannot be viewed in isolation without giving it weight with regard to the element (ii) and for that matter element (i).

That is, this aspect of Applicant's claim when viewed as a whole requires each computational agent to use three different pieces of information (e.g., limitations (i), (ii), and (iii)) received from three different sources (e.g., a global controller, its neighborhood computational agents, and its sensors) to determine adjustments to its at least one actuator unit in its spatially localized region of control to move the object along the transport assembly, as set forth in claim 1. Accordingly, Fujita and Harada or either taken singly or in combination thus fail to disclose or suggest these elements of Applicant's invention recited in claim 1.

C. Summary of 35 U.S.C. § 103 rejection

In summary, if there exists a reason, suggestion, or motivation in Fujita and Harada to arrive at the elements as a whole of the claimed invention, it is not other than from the disclosure in Applicant's invention since nothing in the combination of references would suggest a transport assembly for moving an object as recited in Applicant's claim 1. Accordingly for all of the reasons set forth above, Fujita taken singly or in combination with Harada fail to disclose the combination of the elements of claim 1 taken a whole.

In addition, it should be noted that independent claim 15 contains the same or very similar limitations to those discussed above with respect to claim 1, and therefore the argument presented above with regard to claim 1 applies equally to independent claim 15. Furthermore, claims 2-14 and 16-20 are dependent claims depending directly or indirectly from one of independent claims 1 or 15 and thus contain all limitations of the claims from which they depend. Accordingly, the

argument presented above with regard to independent claim 1 (and 15) applies equally to those dependent claims.

2. Rejection Of Claims 1-20 Under The Judicially Created Doctrine Of Obviousness-Type Double

Claims 1-20 were also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over: (a) claims 1-20 of U.S. Patent No. 6,119,052; (b) claims 1-20 of U.S. Patent No. 6,039,316; (c) claims 1-20 of U.S. Patent No. 6,027,112; and (d) claims 1-6 of U.S. Patent No. 5,634,636.

Applicant does not traverse the rejection of claims 1-20 over claims 1-20 of U.S. Patent Nos. 6,119,052, 6,039,316, and 6,027,112 and will submit a terminal disclaimer to overcome the rejections upon an indication of allowable subject matter. In accordance with M.P.E.P. § 804.02, the filing of such a terminal disclaimer shall not be deemed an admission of the propriety of the double patenting rejection. Quad Environmental Technologies Corp. v. Union Sanitary District, 946 F.2d 870, 20 U.S.P.Q. 2d 1392 (Fed. Cir. 1991).

Applicant, however, respectfully traverse the rejection of claims 1-20 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 5,634,636. Under §804, paragraph II.B.1(a) of the Manual of Patent Examining Procedure ("MPEP"), such an obviousness type double patenting rejection should be made only if the invention defined in Applicant's claim is obvious over the claimed invention in U.S. Patent No. 5,634,636.

The Office Action (page 12, lines 8-10) assets that Applicant's claims 1-20 are an obvious variation of claims 1-6 of U.S. Patent No. 5,634,636 with the following statement:

> Although the conflicting claims are not identical, they are not patentably distinct from each other because they both describe a distributed control system for controlling microactuator arrays to transport sheets.

Applicant submits that the Applicant's claims 1-20 are patentably distinct from claims 1-6 of U.S. Patent No. 5,634,636 because independent claim 1 recites computational agents and a global controller as described in detail above in section 1.B.

Specifically, claim 1 recites that the computational agents located proximate to each other on a transport assembly for moving an object that are: (a) grouped into a plurality of local neighborhoods; and (b) communicatively coupled to each other for directly communicating their desired actuator responses to each other. In addition, claim 1 recites that the global controller receives aggregate operation characteristics from computational agents, and delivers global constraints to the computational agents.

Furthermore, Applicant's claim 1 recites that each computational agent uses (i) global constraints delivered by the global controller, (ii) the desired actuator responses received from computational agents in its local neighborhood of computational agents, and (iii) positional information from at least one actuator unit in its spatially localized region of control to move the object along the transport assembly.

Accordingly, Applicant submits that the invention recited in claim 1 is non-obvious over any of claims 1-6 of U.S. Patent No. 5,634,636 that do not recite the formation of local neighborhoods of computational agents or a global controller that receives aggregate operating characteristics from and delivers global constraints to the computational agents.

In addition, as set forth above, it should be noted that independent claim 15 contains the same or very similar limitations to those discussed in this section with respect to claim 1, and therefore the argument presented in this section with regard to claim 1 applies equally to independent claim 15.

Also as set forth above, claims 2-14 and 16-20 are dependent claims depending directly or indirectly from one of independent claims 1 or 15 and thus contain all limitations of the claims from which they depend. Accordingly, the argument presented in this section with regard to independent claim 1 (and 15) applies equally to those dependent claims.

9. Conclusion

Based on the arguments presented above, claims 1-20 are believed to be in condition for allowance. Applicant therefore respectfully requests that the Board of

Patent Appeals and Interferences reconsider this application, reverse in whole the decision of the Examiner, and pass this application for allowance.

Respectfully submitted,

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APPENDIX A

Claims

1. A transport assembly for moving an object, comprising:

sensor units and actuator units arranged on the transport assembly; said sensor units for providing positional information of the object; said actuator units for moving the object relative to the transport assembly;

computational agents coupled said sensor units and said actuator units; each computational agent receiving positional information from at least one sensor unit and computing a desired actuator response for at least one actuator unit in a spatially localized region of control on the transport assembly; and

a global controller, coupled to said computational agents, for receiving aggregate operating characteristics from, and delivering global constraints to, said computational agents;

wherein said computational agents are grouped into a plurality of local neighborhoods; the computational agents in each local neighborhood being: (a) coupled to sensors and actuators that are located physically proximate to each other on the transport assembly; and (b) communicatively coupled to each other for directly communicating their desired actuator responses to each other; and

wherein each of said computational agents use (i) the global constraints delivered by the global controller, (ii) the desired actuator responses received from the computational agents in their local neighborhood, and (iii) the positional information from the at least one sensor unit in its spatially localized region of control, to determine adjustments to the at least one actuator unit in its spatially localized region of control to move the object along the transport assembly.

2. The transport assembly according to claim 1, further comprising a lookup table for communicating the global constraints to said computational agents.

3. The transport assembly according to claim 1, further comprising a filter unit for computing the aggregate operating characteristics after receiving the positional information from the computational units.

4. The transport assembly according to claim 1, wherein said global controller receives the aggregate operating characteristics over a first operating interval.

5. The transport assembly according to claim 4, wherein said global controller delivers the global constraints over a second operating interval.

6. The transport assembly according to claim 5, wherein the second operating interval is longer than the first operating interval.

7. The transport assembly according to claim 1, wherein sizes of the local neighborhoods of computational agents is determined adaptively.

8. The transport assembly according to claim 1, wherein sizes of the local neighborhoods of computational agents are fixed.

9. The transport assembly according to claim 1, wherein said computational agents compute a global response using the global constraints.

10. The transport assembly according to claim 9, wherein each computational agent computes the desired actuator response using the positional information from the at least one sensor unit in its spatially localized region of control on the transport assembly.

11. The transport assembly according to claim 10, wherein said computational agents determine whether spatially localized groupings of sensor and actuator units function properly.

12. The transport assembly according to claim 1, wherein said computational agents rank the global response and the desired actuator response in importance using weights.

13. The transport assembly according to claim 12, wherein said computational agents adaptively determine values for the weights.

14. The transport assembly according to claim 1, wherein said computational agents and said global controller are organized hierarchically.

15. In a transport assembly having sensors, actuators and a controller, the controller having computational agents and a global controller for controlling movement of an object on the transport assembly, a method for operating each of the computational agents, comprising the steps of:

receiving positional information from at least one sensor in a spatially localized region of control on the transport assembly;

computing a desired actuator response for at least one actuator in its spatially localized region of control on the transport assembly;

computing a global actuator response for detected global constraints from the global controller;

receiving desired actuator responses from other computational agents in a local neighborhood of computational agents to which it is grouped; the computational agents grouped in each local neighborhood being coupled to sensors and actuators that are located physically proximate to each other on the transport assembly;

computing an actuator response using (i) the computed local actuator response received from computational agents in its local neighborhood of computational agents, (ii) the positional information from the at least one sensor in its spatially localized region of control, and (iii) the computed global actuator response; and

applying the actuator response to the at least one actuator in its spatially localized region of control on the transport assembly.

16. The method according to claim 15, wherein the computed actuator response compensates for malfunctioning actuators.

17. The method according to claim 16, wherein the desired actuator response is computed using accumulated positional information from the at least one senor in its spatially localized region of control on the transport assembly.

18. The method according to claim 15, wherein the size of the local neighborhoods of computational agents is determined adaptively.

19. The method according to claim 16, further comprising the step of determining whether spatially localized groupings of sensors and actuators function properly.

20. The method according to claim 16, wherein said step of computing a desired actuator response further comprises the step of retrieving the global constraints from a lookup table.